DLA-92-P90259

AN ESTIMATE OF TRANSPORTATION SAVINGS FROM THE REGIONAL FREIGHT CONSOLIDATION CENTER

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OPERATIONS RESEARCH AND ECONOMIC ANALYSIS OFFICE

DEPARTMENT OF DEFENSE
DEFENSE LOGISTICS AGENCY

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DLA-LO

FOREWORD

In December 1988 the Defense Logistics Agency (DLA) began implementing the Regional Freight Consolidation Center Program (RFCCP) to support Defense Management Review Decision 915. Follow-up studies on individual sites performed by DLA's Operations Research And Economic Analysis Office (DORO) have reported lower savings levels than predicted by the feasibility studies exploring the RFCCP concept. This study estimates the transportation savings possible using knowledge acquired since the beginning of implementation of the RFCCP.

The results of this analysis are based in part on studies previously published by DORO as well as on a report published by the Defense Audit Service, Review of Costs Associated with the Use of Government Bills of Lading and Commercial Bills of Lading (Project 8ST-178). A copy of the latter report was obtained from the office of the DLA Directorate of Supply Operations, Transportation Division.

We would like to thank the DLA Directorate of Supply Operations, Transportation Division for their assistance in obtaining data necessary for performing this study as well as for their comments and suggestions which proved very helpful in conducting this analysis.

ROGER C. ROY
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EXECUTIVE SUMMARY

The Defense Logistics Agency's (DLA) Operations Research And Economic Analysis Management Support Office was asked by the DLA Directorate of Supply Operations, Transportation Division, to provide an analysis of the savings/loss associated with the operation of the Regional Freight Consolidation Center Program (RFCCP). The earlier feasibility studies explored the savings potential of the RFCCP under ideal conditions, e.g., perfect consolidation, all vendors participating etc. This project was to be an analysis based on experience gained from limited implementation of the RFCCP. Experience was based on the operations of the vendor program at the five commercial sites and on the operations of the only pool program implemented to date (Los Angeles commercial site). The objectives of this study were: to calculate the transportation cost of direct shipment, to calculate the transportation cost of those same shipments through the RFCCP and to compare the results of those calculations on a site and on an overall basis. The scope of the study included both vendor and pool operations at the five commercial sites and six DLA depot sites using data from July 1989 through June 1990; the scope of this work did not include the Primary Distribution System.

The conclusions of the study are as follows. The system-wide transportation savings estimate for the RFCCP has been revised from the best case scenario projected in the feasibility studies of $31,028,538 to $5,181,275 per year. The lower revised savings figure is composed of the following individual program savings. The annual savings for the vendor program is changed from the forecast value of $14,092,750 to $4,097,429. All sites were found to be saving transportation dollars. The savings is reduced from the anticipated level for the following reasons: Class 50 rates are more representative when estimating direct transportation costs than the Class 77.5 rates employed in the feasibility study and freight volume is below the forecast level (49% vs 100%). The latter is attributed to the fact vendors are free to choose whether or not to participate in the RFCCP. The yearly savings for the pool program is revised from the forecast value of $16,935,788 to $1,083,846. Pool operations were shown to offer a modest savings over direct shipment for 8 of the 11 sites; 3 sites were found to show a loss: Jacksonville, FL, Tracy, CA and New York, NY. If the assumption is made that the pool program is not implemented at those sites showing a loss then the estimated yearly savings increases to $1,469,322. The savings level is below expectations primarily because of the Guaranteed Traffic Program's success in obtaining low direct rates.

The study also quantified an indirect savings in cost resulting from the reduced number of Government Bills of Lading (GBLs) prepared under the RFCCP. This savings, not anticipated in the feasibility studies, would be realized

through a reduction in personnel and to a lesser extent through a reduction in postage and supplies costs. Based on the estimated cost of preparing a GBL, as determined in an earlier report by the Defense Audit Service, the annual savings to DLA in costs is estimated to be $972,882. If costs incurred by all other DoD activities involved in processing GBLs are included in the savings calculation, the savings to DoD is estimated to be $2,297,911 (principally labor), which includes the $972,882 savings to DLA. This savings is associated solely with the pool program of the RFCCP; the magnitude of this savings assumes full implementation of the pool program.

Finally, the study concludes the likelihood of achieving the cited savings is open to question: the savings to DLA generated by the vendor program has not been verified since the contract unit price changes due to the vendor program have not been identified. However, a new effort is being planned to attempt to identify this savings. The amount of savings generated by the pool program depends entirely upon the competitiveness of site operators' transportation rates with those of the Guaranteed Traffic Program. The savings due to originating fewer GBLs is an administrative savings realized primarily (assuming full implementation of the pool program) through attrition of the staff preparing and processing GBLs; a lesser portion of the savings is due to reduced costs for postage and supplies.

I. INTRODUCTION. The Defense Logistics Agency's (DLA) Operations Research And Economic Analysis Management Support Office was asked by the DLA Directorate of Supply Operations, Transportation Division, to provide an analysis of the savings/loss associated with the operation of the Regional Freight Consolidation Center Program (RFCCP) for both pool and vendor programs.

A. Background.

The RFCCP, formerly known as the Enhanced DLA Distribution System, i.e. EDDS, is an initiative of DLA to reduce transportation costs while simultaneously maintaining the required level of service to the customer. The RFCCP is a two-way concept affecting both inbound vendor freight to the depots (vendor consolidation) and outbound freight to the customer (pooling).

Under vendor consolidation, vendors send their small parcel and less-than-truckload (LTL) shipments to the nearest Regional Freight Consolidation Center (RFCC) for consolidation into large truckload (TL) lots that are subsequently forwarded to the depot. The savings in transportation dollars are obtained by the difference between the cost of shipping many small parcel/LTL shipments long distances and the cost of consolidating those same shipments into a few large TL shipments at a nearby consolidation center for transshipment to the depot. The vendor program has been implemented at five commercial sites and two of the six DLA depots. Several recent studies have confirmed that the vendor program is saving transportation dollars though not at the level originally forecast.[1]

Under the pool program the six primary DLA depots combine all their small LTL freight for customers located in an RFCC region into truckload lots. At the RFCC the truckloads from the different depots are pooled and large LTL shipments are consolidated for final delivery to the customer. The savings in transportation dollars are achieved by the difference between the cost of the depots' sending many small, long-haul LTL shipments and the cost of the depots' sending truckload lots to the RFCC for pooling and final delivery. Currently, the pool program is in operation at one commercial site. A recent study shows that the pooling program at this one site is generating a modest savings; however the savings are less than originally believed possible.[2]

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1. Defense Logistics Agency, Enhanced DLA Distribution System (EDDS) Analysis, February 1987, DLA-LO Project No. 7002.

2. Defense Logistics Agency, Enhanced DLA Distribution System (EDDS) "Pooling," June 1988, DLA-LO Project No. 7020.

The Regional Freight Consolidation Center Program Office (RFCCPO), charged with overseeing the implementation and management of the RFCCP, requires guidance in continuing the implementation of both vendor and pool operations at the remaining sites. Also, since savings for the RFCCP have been less than anticipated and because of the importance of the RFCCP to Defense Management Review Decision (DMRD) 915, the savings projection for the RFCCP must be re-evaluated based on actual operational experience to determine an estimate of the program's savings potential. The savings estimates provided by the previously cited feasibility studies were a best case scenario, based on ideal conditions (e.g., perfect consolidation, 100 percent vendor participation, etc.).

B. Problem Statement. Evaluate the expected transportation savings of the RFCCP using experience gained during the first 3 years of limited RFCC operations.

C. Objectives.

The objectives of the study are as follows:

(1) Calculate the transportation cost of direct shipment.

(2) Calculate the transportation cost of those same shipments through the RFCCP.

(3) Compare the results of (1) and (2) on a site and on an overall basis.

D. Scope.

1. The study will use 1 year's data (last quarter fiscal year 1989 and first 3-quarters fiscal year 1990).

2. Shipment data will be limited to RFCC-eligible shipments.

3. Modes are restricted to closed van, small parcel and trailer-on-flatcar (TOFC).

4. Destinations are limited to customers located in the continental U.S. (CONUS).

5. Freight origins are limited to the six primary DLA depots.

6. The study will include all five commercial RFCC sites and all six DLA depot RFCC sites, both potential and operational.

E. Assumptions and Limitations.

1. All original 11 RFCC sites will be on-line, performing both vendor and pool operations.

2. Freight, which is being consolidated at the depot for the RFCC, is assumed to be held for 2 days before shipping.

3. RFCC sites are assumed to pool and hold for 2 days before shipping to the customer.

4. RFCC sites are assumed to hold vendor freight for 7 days before shipping to the depot.

5. Pool program cost associated with contractor operations at commercial RFCCs will be modeled based on the Guaranteed Traffic Program (GTP) rates of the geographical DLA depot for shipments to that RFCC area plus 1.55 $/Cwt to account for the cost of consolidation (e.g., the Defense Depot Memphis' GTP rates plus 1.55 $/Cwt will be used to model the consolidation and transportation costs of the outbound shipments at the Dallas RFCC).

6. The current policy at the Los Angeles RFCC is to apply a $24 fixed charge for pooled shipments under 70 pounds. The policy will be assumed to be implemented at all the commercially operated RFCCs.

7. The federal supply code for manufacturers and distributors (FSCM) in the vendor data file correctly identifies the origin of the shipment.

8. The tonnage of vendor freight moving through each RFCC is taken to be approximately 49 percent of the potential tonnage for that region.

9. Class 50 rates with a 10 percent discount approximates the level of transportation rates paid by vendors for freight to DLA customers.

10. Analysis is limited to traffic inbound to and outbound from the six prime DLA depots.

II. METHODOLOGY

The approach for estimating savings for both the vendor and pool operations of the RFCCP is based on the knowledge and experience acquired during the 3 years since the RFCCP was first implemented at Los Angeles. Experience is based on the operations of the vendor program at the five commercial sites and on the operations of the only pool program implemented to date (Los Angeles commercial site). The approach emphasizes employing actual recorded costs or costs calculated using current rates: GTP, United Parcel Service (UPS) and Commercial Class 50 with a 10% discount. RFCC operations, such as hold times, are modeled from observed operations of existing RFCCs as shown from recent data analysis.

A. Construction of Database For Pool Program Analysis.

Data was selected from the depot Materiel Release Order (MRO) files and screened for eligibility for the RFCCP. MROs are eligible for the RFCCP if they fall into the following categories:

1. Requisitions to customers in the continental United States (CONUS).

2. Non-Hazardous commodities.

3. MROs shipped via modes closed van, trailer-on-flatcar (TOFC) or small parcel.

4. Small parcel shipments greater than or equal to 35 pounds.

5. Issue Priority Group (IPG) "3" and all IPG "1" and "2" with Hold Code "D."

6. All MROs with a ship weight less than 10,000 pounds.

7. The aggregate weight of MROs to one Destination Cross Reference (DCR) code for 1 day does not exceed 10,000 or more pounds.

B. Construction of Database For Vendor Consolidation Analysis. The database was developed from data contained in the All Active Contract File (ALLACF) for 1 fiscal year. All contract line items were pulled that were less than 10,000 pounds, the DoD breakpoint for LTL shipments moving by closed van or TOFC. Each line was assumed to be a shipment. Shipping weight and mileage fields were appended. Shipping weight was obtained by multiplying the unit weight field by the quantity shipped. In the event that the unit weight field was blank a computer match was made on the NSN file and the weight of the NSN was inserted into the unit weight field. This shipping weight was increased by 10 percent to account for the increase in weight due to packaging. Mileage was obtained by matching the shipment's origin-destination zip codes with the 6-digit zip code field of a reference mileage tape.

C. Transportation Cost Calculation For Pool Program Analysis.

The savings associated with the implemented pool program at the Los Angeles commercial site has been documented in a previous study.[3] Savings estimates from that report, extrapolated to 1 year, were added to the estimated savings figures obtained from the analysis of pool operations at the remaining ten RFCCs.

1. Computation of direct cost for pool program. Computation of the direct cost was a straightforward matter for all depots. All depots have their transportation charges for direct shipments to the customer recorded in the cost field of the data base.

2. Computation of transportation cost of pool program. The transportation cost of the pool program is composed of a "first leg" cost, i.e., from depot to the RFCC, and a "second leg" cost, i.e., from RFCC to the customer.

The first leg cost was obtained in the following way. Shipments formed at the depots for transshipment to an RFCC were built by aggregating weight until truckload size was achieved or for 2 days hold time, whichever came first. The transportation cost for these shipments was calculated by applying the rates of the GTP primary carrier to the aggregate weight. A computer program was built to model the building of shipments at the RFCC for calculation of the second leg transportation cost. The computer program modeled the pooling of shipments from the depots, holding the pooled weight 2 days. At the end of 2 days the weight was aggregated by DCR to build the outbound shipments for delivery to the ultimate consignee.

Pool costs for the second leg were modeled based on the geographical depot (e.g., Defense Depot Memphis' GTP rates plus 1.55 $/Cwt were used to model the cost of consolidation and transportation for the outbound shipments at the Dallas, TX RFCC).

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3. Defense Logistics Agency, Analysis of Pool Distribution Operations at the Los Angeles, California, Regional Freight Consolidation Center, March 1991, DLA-91-P00258.

D. Transportation Cost Calculation For Vendor Consolidation Analysis.

The savings associated with the vendor consolidation implemented at the commercial sites has been documented in previous reports.[4-8] The savings estimates from those reports, extrapolated to 1 year, were added to the savings figures obtained from the analysis of vendor consolidation operations at the six DLA depots.

1. Computation of vendor delivery direct to the depot. The transportation costs were estimated as follows. Shipments whose weight were less than 70 pounds were assumed to go small parcel. Small parcel shipments were rated using the applicable UPS rates. All other LTL shipments were rated using Class 50 commercial rates with a 10% discount.

2. Computation of cost of vendor consolidation program. The transportation cost of the vendor consolidation program was composed of two "legs": the transportation cost from vendor source to RFCC and secondly the transportation cost from the RFCC to the consignee depot. To obtain the first leg cost shipments whose weight were less than 70 pounds were assumed to go small parcel. Small parcel shipments were rated using the applicable UPS rates. All other LTL shipments were rated using Class 50 commercial rates with a 10% discount.

To obtain the second leg cost, vendor shipments were consolidated at the RFCC for transshipment to the consignee depot. A computer program was created to model the consolidating and building of shipments at the RFCC. Shipments from the RFCC to each of the depots were assumed to move as soon as a truckload size (35,000 pounds) was reached or at the end of 7 days, whichever occurred earlier. The consolidated shipments were then rated using the Guaranteed Traffic (GT) rates of the primary carrier plus 1.55 $/Cwt for consolidation.

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4. Defense Logistics Agency, Transportation Cost Analysis of New York EDDS Vendor Consolidation, April 1990, DLA-90-P90174.

5. Defense Logistics Agency, Transportation Cost Analysis of Dallas, TX, EDDS Vendor Consolidation, May 1990, DLA-90-P00111.

6. Defense Logistics Agency, Transportation Cost Analysis for EDDS Vendor Consolidation - Jacksonville, FL, November 1990, DLA-90-P00116.

7. Defense Logistics Agency, Transportation Cost Analysis for RFCC Vendor Consolidation - Chicago, IL, March 1991, DLA-90-P10021.

8. Defense Logistics Agency, Transportation Cost Analysis for RFCC Vendor Consolidation - Los Angeles, CA, Not published, DLA-91- P00118.

III. ANALYSIS

A. Vendor Program Analysis.

Figure 1 shows the results of the comparison between direct shipment from the vendor and shipment through the RFCCP. The estimated yearly savings is $4,097,429. This is revised from an estimated $14 million as portrayed in the original feasibility study. The vertical axis shows savings in thousands of dollars; the horizontal axis identifies the eleven RFCCs. Appendix A contains a list of the RFCCs and the abbreviation for each as well as other applicable terms with their respective meanings.

Results of the vendor program analysis for depots are presented on an individual site basis in Appendix B.

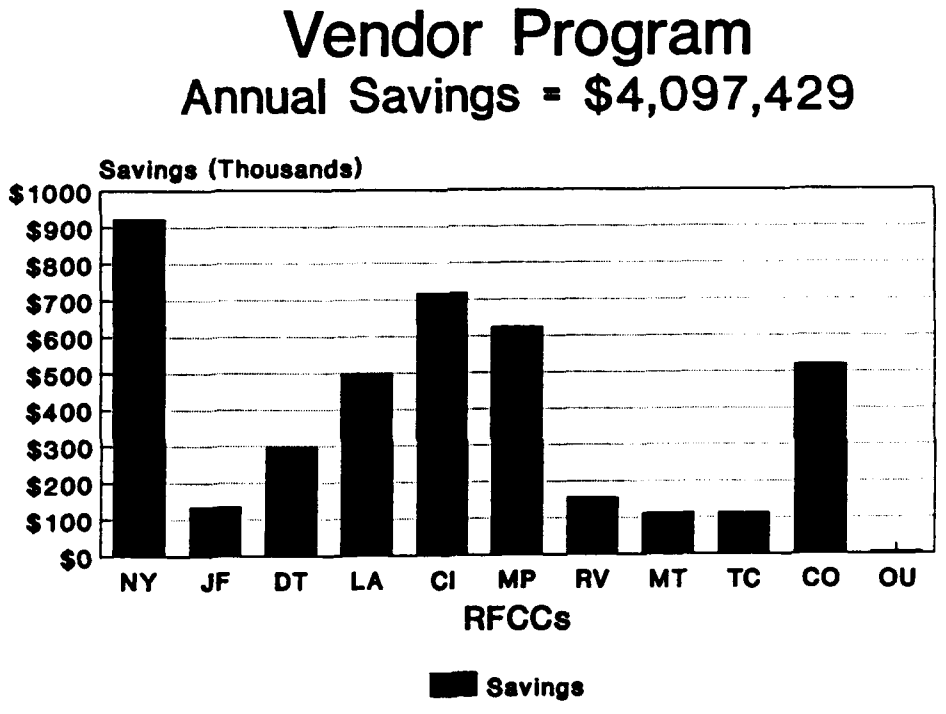

Figure 1

The bar chart shows the distribution of the estimated $4,097,429 savings among the RFCCs. All RFCCs are observed to be operating at breakeven or to be generating a savings. The New York RFCC is estimated to generate the largest savings ($922,365) while the Ogden RFCC essentially breaks even ($5,287). The five commercial RFCCs account for $2,568,537 or approximately 63 percent of the savings total. The depots that generate the greatest vendor savings are Defense Depot Mechanicsburg ($623,829) and Defense Depot Columbus ($519,178).

Table 1 (following page) presents the data used for Figure 1. The table shows that the study is based on a freight volume of 102,270,825 pounds. This weight represents 49 percent of the freight volume eligible to move through the RFCCP for the 1-year period. The 49 percent figure is derived from the volume of freight actually shipped through the existing commercial RFCCs divided by the total volume of freight identified as eligible to be shipped through those same RFCCs.

Figure 2 presents a comparison of volume versus savings. The left vertical axis shows volume in thousands of pounds and the right vertical axis shows savings in millions of dollars; the horizontal axis identifies the different RFCCs. The bar chart shows a relationship between volume and savings – those RFCCs with high volume also show the most savings. Therefore one observation would be that the way to boost savings for the vendor program is to increase vendor participation. A recent survey of vendors showed that reasons for vendors not participating in the RFCC program include: they are not educated in the program, they contract out transportation & packaging services and they have experienced a slow payment process.

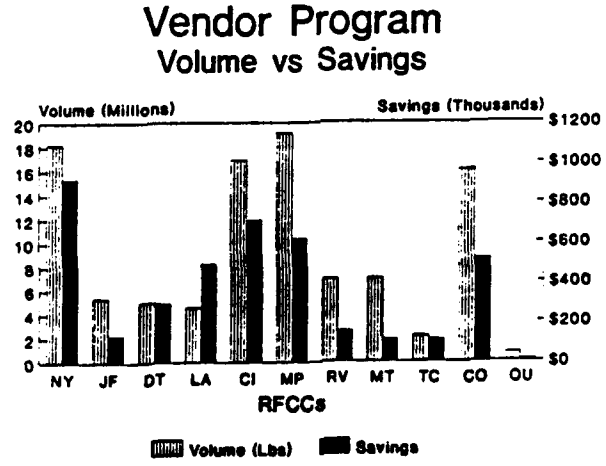

Figure 2

9. DLA-OTC Interoffice Memorandum, 27 Nov 91. Subject: Review of Vendors Use of RFCC.

Table 1

VENDOR SYSTEM SUMMARY

Direct Cost vs RFCCP Cost

RFCCs	Weight	Inbound CBLs	Outbound GBLs	Consldtn Cost	Direct Cost	Savings (Direct - Consldtn)	Percent Savings	Direct $/Cwt	Consldtn $/Cwt
* New York, NY	18,232,508	80,753	1,277	$3,474,992	$4,397,357	$922,365	20.98%	$24.1182	$19.0593
* Jacksonville, FL	5,393,272	17,284	312	$957,516	$1,092,136	$134,620	12.33%	$20.2500	$17.7539
* Dallas, TX	5,039,786	18,816	258	$1,253,880	$1,551,192	$297,312	19.17%	$30.7789	$24.8796
* Los Angeles, CA	4,599,120	49,356	396	$1,003,836	$1,499,376	$495,540	33.05%	$32.6014	$21.8267
* Chicago, IL	16,949,312	44,404	616	$2,560,770	$3,279,470	$718,700	21.92%	$19.3487	$15.1084
Mechanicsburg, PA	19,190,202	29,328	487	$2,845,134	$3,468,963	$623,829	17.98%	$18.0767	$14.8260
Richmond, VA	6,960,535	11,748	289	$1,083,601	$1,239,847	$156,246	12.60%	$17.8125	$15.5678
Memphis, TN	6,970,177	11,445	307	$953,296	$1,065,111	$111,815	10.50%	$15.2810	$13.6768
Tracy, CA	2,133,570	8,219	257	$396,415	$508,952	$112,537	22.11%	$23.8545	$18.5799
Columbus, OH	16,074,189	80,236	447	$2,695,284	$3,214,462	$519,178	16.15%	$19.9977	$16.7678
Ogden, UT	728,154	5,474	255	$149,282	$154,569	$5,287	3.42%	$21.2275	$20.5014
Total	102,270,825	357,063	4,901	$17,374,005	$21,471,435	$4,097,429	19.08%	$20.9947	$16.9882

() - Loss

NOTE: Sites marked with '*' indicate results based on most recent DORO site analysis extrapolated to one year.

Figure 2 shows at least one possible anomaly. The Los Angeles RFCC registers a savings that appears to be out of proportion to the volume of freight through that RFCC. The result is based on an analysis of data supplied by the site operator; some data were incomplete. As of this date this problem still exists, i.e., missing inbound bill-of-lading information. This information is necessary for calculating the cost of direct shipment. As soon as the site operator corrects this data collection problem the analysis will be repeated to verify the level of savings.

Figures 3 and 4 are bar charts showing the affect on the savings of the original feasibility study when the costs are based on different Class rates. The figures show results when costs are calculated using Class 77.5 rates with volume at 100 percent, and when costs are computed using Class 50 rates with 100 percent volume. Experience with the RFCCP has shown that the direct cost to ship is more closely modeled by Class 50 rates. Figure 3 shows the

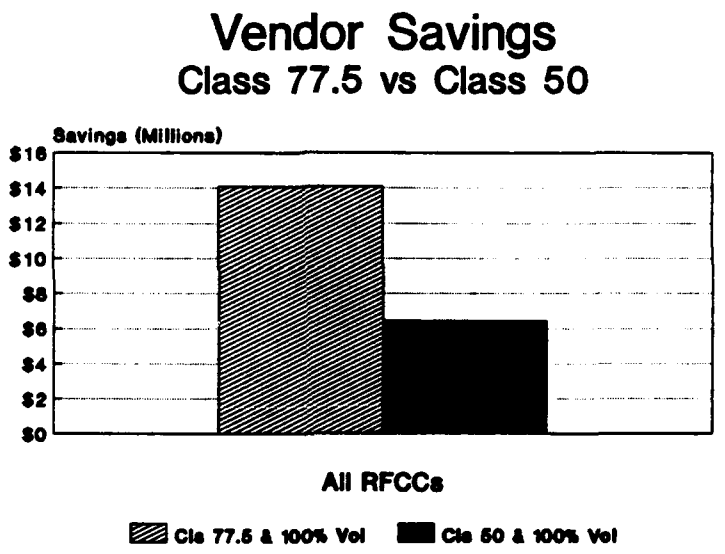

Figure 3

yearly savings potential is substantially reduced from $14 million to an estimated $6.5 million. Figure 4 displays the breakdown of the aggregate results of Figure 3 into the two classes of RFCCs: commercial sites and depot sites. For the savings based on Class 50 rates and full volume the five commercial sites account for $5.1 million of the $6.5 million savings.

The reduced savings level experienced by the RFCCP is believed to be largely due to the two factors discussed: lower than anticipated freight volumes and lower than estimated Class rates for direct shipment.

Vendor Savings By RFCC
Class 77.5 vs Class 50

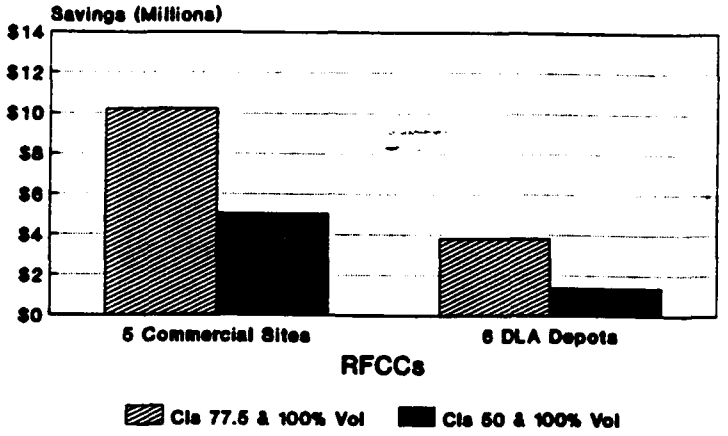

Figure 4

B. Pool Program Analysis.

Figure 5 presents the results of the pool program analysis. The annual savings estimate for this program is $1,083,846. This is revised from an estimated $16.9 million as portrayed in the original feasibility study. The format for this bar chart is identical to the format of Figure 1. Eight of the 11 sites show the RFCCP generating a modest savings in transportation dollars; results for the New York, NY, site, Jacksonville, FL, site and Tracy, CA, site show a loss. Table 2 presents the detail supporting the results shown in Figure 5 indicating the analysis is based on 225,300,624 pounds of RFCC-eligible freight. As noted, the Los Angeles RFCC results are based on a previous DORO study.

Results of the pool program analysis are presented on an individual site basis in Appendix C.

Pool Program
Annual Savings = $1,083,846

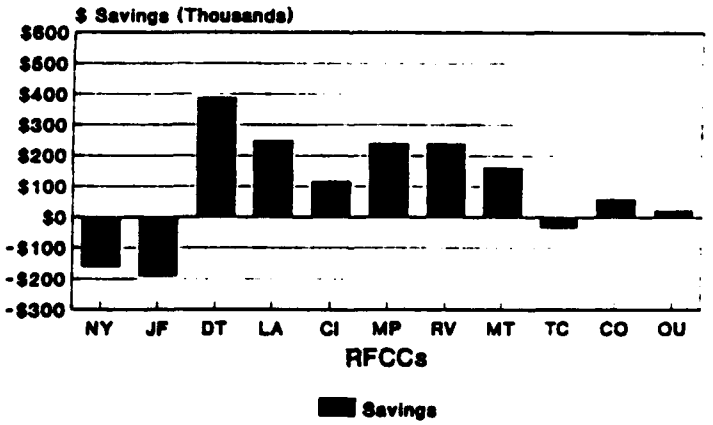

Figure 5

Table 2
POOLING SYSTEM SUMMARY
Direct Cost vs RFCCP Cost

RFCCs	Weight	Inbound GBLs	Outbound GBLs	Pooling Cost	Direct Cost	Savings (Direct - Pooling)	Percent Savings	Direct $/Cwt	Pooling $/Cwt
New York, NY	6,364,091	676	5,827	$646,671	$486,633	($160,038)	-32.89%	$7.6465	$10.1612
Jacksonville, FL	26,292,191	1,086	10,828	$2,322,602	$2,131,140	($191,462)	-8.98%	$8.1056	$8.8338
Dallas, TX	30,984,519	1,220	5,975	$2,605,749	$2,992,689	$386,940	12.93%	$9.6587	$8.4098
* Los Angeles, CA	21,916,184	1,024	8,920	$2,053,232	$2,300,368	$247,136	10.74%	$10.4962	$9.3686
Chicago, IL	11,096,853	722	10,339	$1,212,657	$1,327,433	$114,776	8.65%	$11.9622	$10.9279
Mechanicsburg, PA	26,074,366	665	15,865	$1,638,804	$1,877,747	$238,943	12.72%	$7.2015	$6.2851
Richmond, VA	40,416,646	886	13,228	$2,122,015	$2,360,509	$238,494	10.10%	$5.8404	$5.2503
Memphis, TN	24,184,812	584	17,190	$1,949,534	$2,110,177	$160,643	7.61%	$8.7252	$8.0610
Tracy, CA	21,842,602	681	11,035	$1,902,275	$1,868,299	($33,976)	-1.82%	$8.5535	$8.7090
Columbus, OH	6,993,085	567	8,892	$729,848	$788,661	$58,813	7.46%	$11.2777	$10.4367
Ogden, UT	9,136,755	566	5,132	$836,828	$860,405	$23,577	2.74%	$9.4170	$9.1589
Total	225,302,104	8,677	113,231	$18,020,215	$19,104,061	$1,083,846	5.67%	$8.4793	$7.9982

() - Loss

Note: Sites marked with '*' indicate results based on most recent DORO site analysis extrapolated to one year.

Figure 6 displays the relationship between savings and volume for the pool program. The format is identical to the format for Figure 2; however, the relationship between volume and savings is not as clear. For example, some RFCCs show the same savings level for markedly different throughput, e.g., "LA", "MP" and "RV." Another example of a lack of a clear relationship can be seen by comparing the RFCCs "JF" and "TC." Both show high volume but do not show correspondingly high savings. Increasing the volume of freight through such RFCCs would not be expected to result in savings. These results indicate savings for the pool program is dependent on more than just volume.

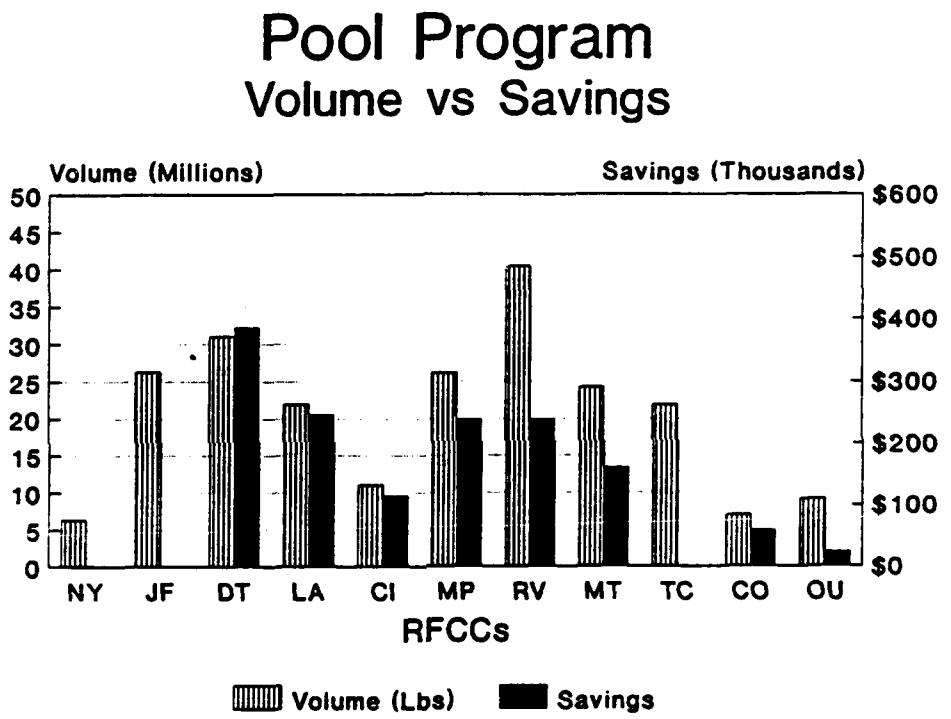

Figure 6

NY, JF & TC Showed No Savings

Figure 7 is presented to gain some insight into the reasons for the pool results, summarizing the situation at the New York RFCC. The DLA Depots are on the horizontal axis, with volume of freight on the left vertical axis and the rate per cwt on the right vertical axis. The graph shows, for example, DDMP shipped 2,701,208 lbs of RFCC-eligible freight at an overall average direct GT rate of 5.36 $/cwt. This rate stands in contrast to the average transportation rate for that RFCC of 10.16 $/cwt, represented by the line across the bar chart. (The 10.16 $/cwt includes the cost for both first and second transportation legs.) The bulk of the freight (72%) moved at average GT rates well below the average rate for the RFCCP at the New York site.

Pool Analysis
New York Site

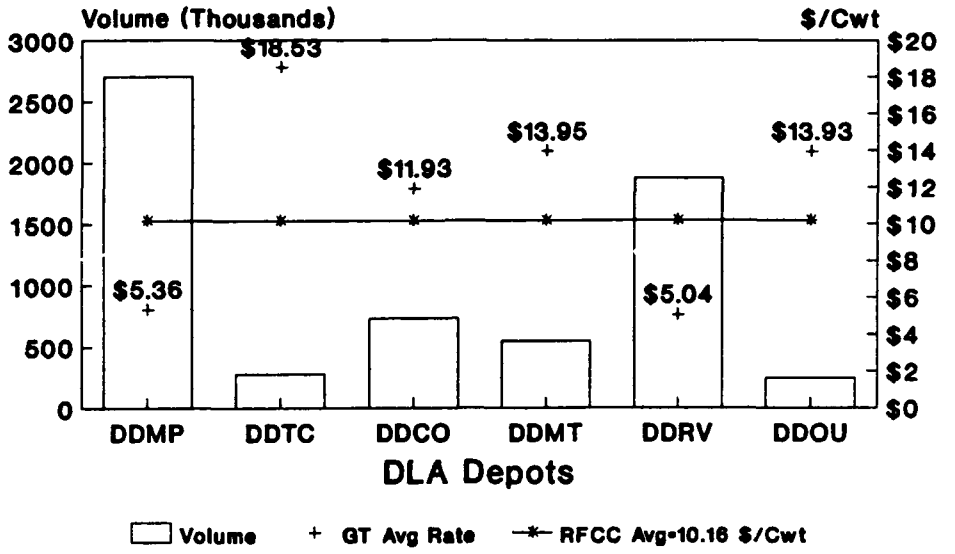

Figure 7

The implication of Figure 7 is that there will be some regions, e.g., Jacksonville, FL, New York, NY and Tracy, CA, in which the RFCCP will have difficulty showing a savings over the direct transportation cost of the GTP. Based on the assumptions and modeling approach of this study, these regions should not be included in the pool program. If the assumption is made that the pool program would not be implemented at these 3 sites, then the estimated system savings for the pool program increases from $1,083,846 to $1,469,322 per year.

Sensitivity analysis was performed on the approach to modeling pool rates. Using the GT rates of the geographic depot plus 1.35 $/Cwt to model consolidation charges increased the overall savings for the RFCCP pool operations from $1,083,846 to $1,488,790. If the consolidation rate was actually 1.00 $/cwt savings would be boosted by $1,113,621 to $2,197,467. Tables summarizing these sensitivity analyses are included in Appendix D.

The reduced savings level experienced by the pool program of the RFCCP is believed to be principally due to lower than estimated direct shipment rates of the GTP.

There is another area of savings attributable to the pool program of the RFCCP that was not anticipated in the feasibility studies. Because of the consolidation of freight at the depots and pool operations at the RFCCs, fewer and larger shipments are made to customers than if the freight had gone direct. Table 3 shows for each RFCC the number of GBLs that did go direct, the number of GBLs that would be cut under the RFCCP (both vendor and pool) and the difference in number.

Table 3

SAVINGS OBTAINED FROM THE REDUCTION
IN THE NUMBER OF GBLS PREPARED

RFCC Sites	VENDOR RFCCP GBLs	POOL RFCCP GBLs	Direct GBLs	Direct GBLs - RFCCP GBLs	Cost Savings
Mechanicsburg, PA	487	17,191	74,021	56,343	$183,678
Richmond, VA	289	14,431	72,839	58,119	$189,468
Memphis, TN	307	19,229	98,145	78,609	$256,265
Tracy, CA	257	12,393	58,283	45,633	$148,764
Columbus, OH	447	10,313	40,183	29,423	$95,919
Ogden, UT	255	6,462	37,020	30,303	$98,788
Total	2,042	80,019	380,491	298,430	$972,882

Note: Outbound GBLs from commercial RFCC sites are not included in the savings calculation since the cost of preparing these GBLs is included in the site operator's rates.

The savings resulting from the reduced number of GBLs issued is based on the cost of a GBL as determined by a Defense Audit Service study.[10] The average cost of a GBL in 1979 was computed to be $8.12, representing all charges (principally labor) incurred by the Department of Defense; of that amount $1.76 represents the portion of that cost, attributed to DLA shipping activities, expected to be saved. This value was adjusted to the 1991 level of $3.26 using National Defense Purchases price deflators for compensation for services of civilian employees. Table 3 shows that the RFCCP is estimated to reduce the number of GBLs issued by 298,430. This number takes into account the increase in the number of GBLs issued by the depots due to vendor program operations. Applying the inflation-adjusted cost of a GBL the computed annual net cost savings to DLA is $972,882. Based on the report's analysis of the allocation of labor charges this savings derives from the reduction in workload at the shipping activities.[11] Less staff would be required to originate the reduced number of GBLs.

If the cost to process a GBL is expanded to include those costs incurred at other DoD activities, e.g., Army Finance Center, then the net cost savings to DoD is $2,297,911, which includes the $972,882 savings to DLA. This savings is based on a cost savings of $4.16 per GBL from the 1979 report, adjusted for inflation to the 1991 savings of $7.70 per GBL.

The GBL savings occurs only on the condition of full implementation of the pool program. The vendor program does not contribute to this savings because the operations of this program act to increase the number of GBLs prepared. Taking an extreme case as an example, if the pool program was cancelled then this entire annual savings would vanish.

IV. ATTAINABILITY OF RFCCP SAVINGS

o The transportation savings attributed to the vendor program of the RFCCP is transportation savings experienced by vendors shipping to RFCCs. Since the inbound vendor shipments are Free-On-Board (FOB) destination, i.e., the transportation cost is included in the price of the item, the reduction in transportation charges experienced by the vendors participating in this program is not visible to DLA. It is assumed that vendors will pass on those savings to DLA in the form of lower contract prices. In May 1990 the RFCCPO requested that DORO analyze contract prices to determine if there had been a

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10. "Review of Costs Associated with the Use of Government Bills of Lading and Commercial Bills of Lading (Project 8ST-178)," Defense Audit Service, Report No. 79-108, 29 June 1979.

11. Ibid., p. 2.

reduction in the price of RFCC-eligible materiel. Analysis of Contract Price Savings Due To EDDS was a study planned by DORO to address this important issue.[12] The study was terminated after the analyst concluded a definitive answer was not possible. Problems encountered in attempting to perform the analysis included: wide variability in the unit price data and difficulty in accounting for all the factors that affect the contract unit price over time. At the time of the writing of this report a new study is being planned, employing an approach different from the first effort, to identify the savings to DLA from the vendor program.

o The cost of the pool program of the RFCCP is founded on two key assumptions identified in the methodology section: the hold time for consolidating freight is 2 days (based on pool operations at Los Angeles) and the pool rates for each site are approximated by the GTP rates of the geographic depot plus 1.55 $/Cwt consolidation charge. A study recently completed, Bid Evaluation For The RFCC South Eastern And South Central, showed that carriers may use hold times as short as 1 day or as long as 5 days for consolidation and employ a rate structure very different from the rate structure of the Guaranteed Traffic Program.[13] The "Bid Evaluation" analysis showed that for a given RFCC region the question of whether a transportation savings is possible and the magnitude of the savings will depend on the operational characteristics and rates of the carriers participating in the solicitation to be site operator. The pool program savings of the RFCCP is a transportation savings to DLA; any reduction in spending would appear in DLA's second destination transportation budget.

o The savings estimated from the reduced number of GBLs is an administrative savings attributed primarily to reduced personnel costs with a lesser portion of the savings attributed to reduced postage and supplies costs. To realize the calculated $972,882 savings to DLA the pool program of the RFCCP would have to be fully implemented i.e. operational at all 11 sites. Results from analysis have shown that the pool program does not generate a savings at three sites: New York, NY, Jacksonville, FL and Tracy, CA. If the assumption is made that the pool program is not implemented at these three sites and the reduced number of GBLs contributed by these RFCCs is eliminated from the savings calculation then the estimated administrative savings decreases from $972,882 to $732,920. Implementation, whether full or partial, would have to be accompanied by a gradual attrition in the number of staff preparing and processing GBLs at the DLA shipping activities. Since the reduction in staff would occur over time the full magnitude of savings would not immediately appear as an annual decrease in the budget.

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12. Defense Logistics Agency, Analysis of Contract Price Savings Due to EDDS, DLA-91-P00175, Not published.

13. Defense Logistics Agency, Bid Evaluation For The RFCC South Eastern And South Central, To be published, DLA-91-P10015.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions.

o The total estimated transportation savings of the RFCCP is estimated at $5,181,275. This is in contrast to the savings of over $31 million as costed in the original feasibility study.

o The vendor program's savings is estimated at $4,097,429. This is in contrast to the savings of over $14 million as forecast in the original feasibility study.

o Reasons for the reduced vendor program savings estimate are: direct costs are based on the lower Class 50 rates and experienced freight volume is 49 percent, far below anticipated level.

o The pool program savings is estimated at $1,083,846. This is in contrast to the savings of over $16 million as forecast in the original feasibility study. If the pool program is not implemented at the 3 sites showing a loss then the pool program savings estimate increases to $1,469,322.

o Primary reason for the reduced pool program savings estimate is the low direct rates of the GTP.

o The reduction in the number of GBLs prepared under the RFCCP is estimated to save an annual $972,882 to DLA ($2,297,911 to DoD). This savings, not included in the earlier feasibility studies, would be primarily realized through a reduction in personnel. A lesser portion of this savings would be due to reduced postage and supplies costs. This savings is based on full implementation of the pool program and it is associated only with the pool program of the RFCCP. Implementation of the vendor program does not contribute to this savings figure.

o The likelihood of achieving the cited savings is open to question "the savings to DLA generated by the vendor program has not been verified because of the difficulty in identifying contract price changes specifically due to the vendor program". However, a new study is being planned, employing an approach different from the previous effort, to identify the savings generated by this program. The amount of savings generated by the pool program depends entirely upon the competitiveness of the site operators' transportation rates with those of the GTP. The savings due to originating fewer GBLs under the pool program is an administrative savings largely realized through attrition of the number of staff preparing and processing GBLs and to a lesser extent through reduced postage and supplies costs.

B. Recommendations.

o Perform an analysis of vendor operations at the Los Angeles RFCC to confirm vendor program savings level as soon as the data collection problem at the site is corrected.

o Initiate a study to ascertain attainability of savings.

APPENDIX A

Abbreviations

Abbreviation	Meaning
CI	Chicago, IL
CO	Columbus, OH
Cwt	Hundredweight
DCR	Destination Cross Reference Code
DDCO	Defense Depot Columbus, OH
DDMP	Defense Depot Mechanicsburg, PA
DDMT	Defense Depot Memphis, TN
DDOU	Defense Depot Ogden, UT
DDRV	Defense Depot Richmond, VA
DDTC	Defense Depot Tracy, CA
DT	Dallas, TX
GBL	Government Bill of Lading
GT	Guaranteed Traffic
GTP	Guaranteed Traffic Program
IPG	Issue Priority Group
JF	Jacksonville, FL
LA	Los Angeles, CA
LTL	Less-than-Truckload

Abbreviation	Meaning
MP	Mechanicsburg, PA
MT	Memphis, TN
NY	New York, NY
OU	Ogden, UT
RFCC	Regional Freight Consolidation Center
RV	Richmond, VA
TC	Tracy, CA
TL	Truckload
TOFC	Trailer-on-flatcar

APPENDIX B

Vendor Analysis For Individual Sites

(DLA Depots Only)

Table B-1

DIRECT COST VS RFCCP COST FOR MEMPHIS RFCC

Direct Delivery Estimate

	DDMP	DDTC	DDCO	DDMT	DDRV	DDOU	Total
Weight	885,143	1,259,286	881,624	1,985,370	1,065,645	893,109	6,970,177
CBLs	1,600	1,529	1,589	1,593	2,400	2,734	11,445
Cost	$149,131	$293,176	$113,980	$164,609	$163,585	$180,630	$1,065,111

RFCCP First Leg - Inbound Transportation Cost

Weight	885,143	1,259,286	881,624	1,985,370	1,065,645	893,109	6,970,177
CBLs	1,600	1,529	1,589	1,593	2,400	2,734	11,445
Cost	$89,242	$110,643	$81,379	$164,609	$105,290	$85,304	$636,467

RFCCP Second Leg - Outbound Transportation Cost

Weight	885,143	1,259,286	881,624	0	1,065,645	893,109	4,984,807
GBLs	57	68	61	0	63	58	307
Cost	$46,021	$76,634	$24,415	$0	$36,331	$56,163	$239,564

RFCCP Second Leg - Consolidation Cost Using $1.55

Cost	$13,720	$19,519	$13,665	$0	$16,517	$13,843	$77,265

Total RFCCP Cost

	$148,983	$206,796	$119,459	$164,609	$158,139	$155,310	$953,296

Cost Difference (Direct - RFCCP) $111,815

( ) - Loss

Table B-2

DIRECT COST VS RFCCP COST FOR MECHANICSBURG RFCC

Direct Delivery Estimate

	DDMP	DDTC	DDCO	DDMT	DDRV	DDOU	Total
Weight	4,165,663	4,084,317	2,185,003	3,912,950	2,895,119	1,947,150	19,190,202
CBLs	3,987	4,971	4,600	4,668	5,328	5,774	29,328
Cost	$417,134	$1,159,039	$305,967	$654,131	$401,624	$531,068	$3,468,963

RFCCP First Leg - Inbound Transportation Cost

Weight	4,165,663	4,084,317	2,185,003	3,912,950	2,895,119	1,947,150	19,190,202
CBLs	3,987	4,971	4,600	4,668	5,328	5,774	29,328
Cost	$417,134	$432,330	$252,133	$413,362	$329,733	$253,808	$2,098,500

RFCCP Second Leg - Outbound Transportation Cost

Weight	0	4,084,317	2,185,003	3,912,950	2,895,119	1,947,150	15,024,539
GBLS	0	126	78	123	92	68	487
Cost	$0	$256,266	$27,329	$93,560	$32,411	$104,188	$513,754

RFCCP Second Leg - Consolidation Cost Using $1.55

Cost	$0	$63,307	$33,868	$60,651	$44,874	$30,181	$232,880

Total RFCCP Cost

$417,134	$751,903	$313,330	$567,573	$407,018	$388,177	$2,845,134

Cost Difference (Direct - RFCCP) $623,829

( ) - Loss

Table B-3

DIRECT COST VS RFCCP COST COST FOR RICHMOND RFCC

Direct Delivery Estimate

	DDMP	DDTC	DDCO	DDMT	DDRV	DDOU	Total
Weight	1,018,889	1,482,325	661,000	1,384,692	1,700,073	713,556	6,960,535
CBLS	1,285	2,488	1,069	1,829	3,129	1,948	11,748
Cost	$126,926	$437,767	$93,852	$219,397	$171,100	$190,805	$1,239,847

RFCCP First Leg - Inbound Transportation Cost

Weight	1,018,889	1,482,325	661,000	1,384,692	1,700,073	713,556	6,960,535
CBLs	1,285	2,488	1,069	1,829	3,129	1,948	11,748
Cost	$111,934	$156,808	$73,783	$139,467	$171,100	$83,190	$736,282

RFCCP Second Leg - Outbound Transportation Cost

Weight	1,018,889	1,482,325	661,000	1,384,692	0	713,556	5,260,462
GBLs	55	62	56	62	0	54	289
Cost	$16,242	$123,611	$21,668	$41,025	$0	$63,236	$265,782

RFCCP Second Leg - Consolidation Cost Using $1.55

Cost	$15,793	$22,976	$10,246	$21,463	$0	$11,060	$81,537

Total RFCCP Cost

	$143,969	$303,395	$105,697	$201,955	$171,100	$157,486	$1,083,601

Cost Difference (Direct - RFCCP) $156,246

( ) - Loss

Table B-4

DIRECT COST VS RFCCP COST FOR TRACY RFCC

Direct Delivery Estimate

	DDMP	DDTC	DDCO	DDMT	DDRV	DDOU	Total
Weight	353,126	444,789	151,888	413,590	472,879	297,298	2,133,570
CBLs	1,051	1,172	931	743	2,043	2,279	8,219
Cost	$107,495	$52,444	$47,848	$102,215	$145,907	$53,043	$508,952

RFCCP First Leg - Inbound Transportation Cost

Weight	353,126	444,789	151,888	413,590	472,879	297,298	2,133,570
CBLs	1051	1172	931	743	2043	2279	8219
Cost	$49,630	$52,444	$19,488	$43,349	$56,652	$37,102	$258,665

RFCCP Second Leg - Outbound Transportation Cost

Weight	353,126	0	151,888	413,590	472,879	297,298	1,688,781
GBLs	51	0	51	50	53	52	257
Cost	$28,992	$0	$12,161	$24,827	$32,465	$13,129	$111,574

RFCCP Second Leg - Consolidation Cost Using $1.55

Cost	$5,473	$0	$2,354	$6,411	$7,330	$4,608	$26,176

Total RFCCP Cost

	$84,095	$52,444	$34,003	$74,587	$96,447	$54,839	$396,415

Cost Difference (Direct - RFCCP) $112,537

( ) - Loss

Table B-5

DIRECT COST VS RFCCP COST FOR COLUMBUS RFCC

Direct Delivery Estimate

	DDMP	DDTC	DDCO	DDMT	DDRV	DDOU	Total
Weight	2,621,947	3,247,495	2,029,895	2,991,326	2,697,566	2,485,960	16,074,189
CBLs	9,789	9,701	7,833	7,085	23,139	22,689	80,236
Cost	$385,992	$939,772	$230,189	$464,981	$496,406	$697,122	$3,214,462

RFCCP First Leg - Inbound Transportation Cost

Weight	2,621,947	3,247,495	2,029,895	2,991,326	2,697,566	2,485,960	16,074,189
CBLs	9,789	9,701	7,833	7,085	23,139	22,689	80,236
Cost	$304,027	$374,658	$230,189	$344,069	$369,684	$357,089	$1,979,716

RFCCP Second Leg - Outbound Transportation Cost

Weight	2,621,947	3,247,495	0	2,991,326	2,697,566	2,485,960	14,044,294
GBLs	86	101	0	94	85	81	447
Cost	$48,655	$213,433	$0	$62,007	$46,601	$127,185	$497,881

RFCCP Second Leg - Consolidation Cost Using $1.55

Cost	$40,640	$50,336	$0	$46,366	$41,812	$38,532	$217,687

Total RFCCP Cost

	$393,322	$638,427	$230,189	$452,442	$458,097	$522,806	$2,695,284

Cost Difference (Direct - RFCCP) $519,178

( ) - Loss

Table B-6

DIRECT COST VS RFCCP COST FOR OGDEN RFCC

Direct Delivery Estimate

	DDMP	DDTC	DDCO	DDMT	DDRV	DDOU	Total
Weight	73,272	170,952	45,556	191,435	131,231	115,708	728,154
CBLs	616	710	671	600	1,333	1,544	5,474
Cost	$20,421	$27,804	$13,277	$39,543	$37,037	$16,487	$154,569

RFCCP First Leg - Inbound Transportation Cost

Weight	73,272	170,952	45,556	191,435	131,231	115,708	728,154
CBLs	616	710	671	600	1,333	1,544	5,474
Cost	$11,169	$21,129	$7,507	$24,297	$18,171	$16,487	$98,760

RFCCP Second Leg - Outbound Transportation Cost

Weight	73,272	170,952	45,556	191,435	131,231	0	612,446
GBLs	51	50	52	50	52	0	255
Cost	$6,438	$7,748	$4,238	$11,782	$10,823	$0	$41,029

RFCCP Second Leg - Consolidation Cost Using $1.55

Cost	$1,136	$2,650	$706	$2,967	$2,034	$0	$9,493

Total RFCCP Cost

	$18,743	$31,527	$12,451	$39,046	$31,028	$16,487	$149,282

Cost Difference (Direct - RFCCP) $5,287

( ) - Loss

APPENDIX C

Pool Analysis For Individual Sites

(Includes All Sites Except Los Angeles CA)

Table C-1

DIRECT COST VS RFCCP COST FOR DALLAS RFCC

Direct Delivery Estimate

	DDMP	DDTC	DDCO	DDMT	DDRV	DDOU	Total
Weight	2,252,640	2,023,075	1,388,153	19,085,576	2,054,299	4,180,776	30,984,519
GBLs	7,755	6,187	3,847	20,547	5,819	7,128	51,283
Cost	$331,502	$278,379	$195,514	$1,487,911	$331,981	$367,402	$2,992,689

RFCCP First Leg - Inbound Transportation Cost

Weight	2,252,640	2,023,075	1,388,153	19,085,576	2,054,299	4,180,776	30,984,519
GBLs	123	125	119	578	115	160	1220
Cost	$108,488	$96,826	$79,773	$343,592	$110,598	$170,079	$909,356

RFCCP Second Leg - Outbound Transportation Cost

Weight(Lb)	30,984,519	
GBLs	5,975	
Cost	$1,696,393	

Total RFCCP Cost	$2,605,749
Cost Difference (Direct - RFCCP)	$386,940

( ) - Loss

DIRECT COST VS RFCCP COST FOR JACKSONVILLE RFCC

Direct Delivery Estimate

	DDMP	DDTC	DDCO	DDMT	DDRV	DDOU	Total
Weight	2,726,804	1,209,430	1,615,601	13,782,062	6,157,147	801,147	26,292,191
GBLs	6,822	3,438	4,374	13,528	10,010	2,402	40,574
Cost	$273,668	$191,979	$188,196	$850,671	$520,864	$105,762	$2,131,140

RFCCP First Leg - Inbound Transportation Cost

Weight	2,726,804	1,209,430	1,615,601	13,782,062	6,157,147	801,147	26,292,191
GBLs	125	112	116	419	205	109	1086
Cost	$93,270	$92,237	$74,069	$394,203	$127,333	$58,662	$839,774

RFCCP Second Leg - Outbound Transportation Cost

Weight(Lb)	26,292,191	
GBLs	10,828	
Cost	$1,482,828	
Total RFCCP Cost		$2,322,602
Cost Difference (Direct - RFCCP)		($191,462)

( ) - Loss

Table C-3

DIRECT COST VS RFCCP COST FOR MEMPHIS RFCC

Direct Delivery Estimate

	DDMP	DDTC	DDCO	DDMT	DDRV	DDOU	Total
Weight	2,328,144	1,108,954	2,557,148	14,809,722	2,525,686	855,158	24,184,812
GBLs	8,922	3,566	6,757	19,259	8,336	2,562	49,402
Cost	$293,095	$165,678	$284,890	$885,882	$376,616	$104,016	$2,110,177

RFCCP First Leg - Inbound Transportation Cost

Weight	2,328,144	1,108,954	2,557,148	14,809,722	2,525,686	855,158	24,184,812
GBLs	123	110	124	0	120	107	584
Cost	$82,517	$63,752	$73,033	$0	$78,729	$51,684	$349,715

RFCCP Second Leg - Outbound Transportation Cost

Weight(Lb)	24,184,812	
GBLs	17,190	
Cost	$1,599,819	

Total RFCCP Cost	$1,949,534
Cost Difference (Direct - RFCCP)	$160,643

( ) - Loss

Table C-4

DIRECT COST VS RFCCP COST FOR CHICAGO RFCC

Direct Delivery Estimate

	DDMP	DDTC	DDCO	DDMT	DDRV	DDOU	Total
Weight	1,106,968	507,430	2,164,063	4,720,261	932,581	1,665,550	11,096,853
GBLs	5,278	2,004	5,850	8,738	3,504	3,361	28,735
Cost	$158,606	$81,122	$269,589	$490,631	$170,713	$156,772	$1,327,433

RFCCP First Leg - Inbound Transportation Cost

Weight	1,106,968	507,430	2,164,063	4,720,261	932,581	1,665,550	11,096,853
GBLs	112	107	120	171	103	109	722
Cost	$43,200	$41,138	$42,189	$97,804	$43,177	$72,540	$340,048

RFCCP Second Leg - Outbound Transportation Cost

Weight(Lb)	11,096,853	
GBLs	10,339	
Cost	$872,609	
Total RFCCP Cost		$1,212,657
Cost Difference (Direct - RFCCP)		$114,776

( ) - Loss

Table C-5

DIRECT COST VS RFCCP COST FOR NEW YORK RFCC

Direct Delivery Estimate

	DDMP	DDTC	DDCO	DDMT	DDRV	DDOU	Total
Weight	2,701,208	273,109	731,739	542,737	1,874,216	241,082	6,364,091
GBLs	4,066	1,036	1,863	1,446	1,830	582	10,823
Cost	$145,000	$50,617	$87,318	$75,687	$94,437	$33,574	$486,633

RFCCP First Leg - Inbound Transportation Cost

Weight	2,701,208	273,109	731,739	542,737	1,874,216	241,082	6,364,091
GBLs	134	105	116	111	108	102	676
Cost	$48,912	$31,264	$37,761	$49,302	$37,163	$21,521	$225,923

RFCCP Second Leg - Outbound Transportation Cost

Weight(Lb)	6,364,091	
GBLs	5,827	
Cost	$420,748	

Total RFCCP Cost	$646,671
Cost Difference (Direct - RFCCP)	($160,038)

( ) - Loss

Table C-6

DIRECT COST VS RFCCP COST FOR MECHANICSBURG RFCC

Direct Delivery Estimate

	DDMP	DDTC	DDCO	DDMT	DDRV	DDOU	Total
Weight	12,700,912	1,221,924	3,236,540	2,820,522	4,850,689	1,243,779	26,074,366
GBLs	15,382	3,255	7,046	6,505	11,207	3,037	46,432
Cost	$528,149	$181,536	$306,975	$329,826	$386,805	$144,456	$1,877,747

RFCCP First Leg - Inbound Transportation Cost

Weight	12,700,912	1,221,924	3,236,540	2,820,522	4,850,689	1,243,779	26,074,366
GBLs	0	112	137	136	170	110	665
Cost	$0	$93,376	$70,806	$130,380	$61,222	$83,185	$438,969

RFCCP Second Leg - Outbound Transportation Cost

Weight(Lb)	26,074,366	
GBLs	15,865	
Cost	$1,199,835	

Total RFCCP Cost	$1,638,804
Cost Difference (Direct - RFCCP)	$238,943

( ) - Loss

Table C-7

DIRECT COST VS RFCCP COST FOR RICHMOND RFCC

Direct Delivery Estimate

	DDMP	DDTC	DDCO	DDMT	DDRV	DDOU	Total
Weight	10,455,575	1,953,567	4,164,157	4,883,292	17,700,724	1,259,331	40,416,646
GBLs	13,838	4,106	7,579	7,888	12,709	2,924	49,044
Cost	$626,365	$274,727	$348,622	$400,664	$560,644	$149,487	$2,360,509

RFCCP First Leg - Inbound Transportation Cost

Weight	10,455,575	1,953,567	4,164,157	4,883,292	17,700,724	1,259,331	40,416,646
GBLs	325	117	156	177	0	111	886
Cost	$113,653	$117,079	$81,309	$148,627	$0	$93,745	$554,413

RFCCP Second Leg - Outbound Transportation Cost

Weight(Lb)	40,416,646	
GBLs	13,228	
Cost	$1,567,602	
Total RFCCP Cost		$2,122,015
Cost Difference (Direct - RFCCP)		$238,494

( ) - Loss

Table C-8

DIRECT COST VS RFCCP COST FOR TRACY RFCC

Direct Delivery Estimate

	DDMP	DDTC	DDCO	DDMT	DDRV	DDOU	Total
Weight	1,485,317	10,055,003	805,385	2,064,444	824,817	6,607,636	21,842,602
GBLs	4,245	13,774	2,446	5,324	3,267	6,890	35,946
Cost	$268,197	$549,018	$124,159	$356,915	$220,740	$349,270	$1,868,299

RFCCP First Leg - Inbound Transportation Cost

Weight	1,485,317	10,055,003	805,385	2,064,444	824,817	6,607,636	21,842,602
GBLs	109	0	115	123	108	226	681
Cost	$128,833	$0	$75,656	$143,308	$87,217	$175,455	$610,469

RFCCP Second Leg - Outbound Transportation Cost

Weight(Lb)	21,842,602	
GBLs	11,035	
Cost	$1,291,806	
Total RFCCP Cost		$1,902,275
Cost Difference (Direct - RFCCP)		($33,976)

( ) - Loss

Table C-9

DIRECT COST VS RFCCP COST FOR COLUMBUS RFCC

Direct Delivery Estimate

	DDMP	DDTC	DDCO	DDMT	DDRV	DDOU	Total
Weight	1,611,648	268,018	1,216,689	1,917,430	1,746,436	232,864	6,993,085
GBLs	6,176	1,190	4,741	4,367	4,695	896	22,065
Cost	$162,065	$51,079	$141,804	$196,301	$202,818	$34,594	$788,661

RFCCP First Leg - Inbound Transportation Cost

Weight	1,611,648	268,018	1,216,689	1,917,430	1,746,436	232,864	6,993,085
GBLs	115	105	0	116	119	112	567
Cost	$35,263	$22,106	$0	$54,957	$56,420	$17,316	$186,062

RFCCP Second Leg - Outbound Transportation Cost

Weight(Lb)	6,993,085	
GBLs	8,892	
Cost	$543,786	

Total RFCCP Cost	$729,848
Cost Difference (Direct - RFCCP)	$58,813

( ) - Loss

Table C-10

DIRECT COST VS RFCCP COST FOR OGDEN RFCC

Direct Delivery Estimate

	DDMP	DDTC	DDCO	DDMT	DDRV	DDOU	Total
Weight	659,198	2,325,819	404,706	1,944,040	344,716	3,458,276	9,136,755
GBLs	2,057	5,115	1,144	3,638	1,597	3,364	16,915
Cost	$112,361	$209,002	$57,285	$234,875	$92,815	$154,067	$860,405

RFCCP First Leg - Inbound Transportation Cost

Weight	659,198	2,325,819	404,706	1,944,040	344,716	3,458,276	9,136,755
GBLs	108	129	110	116	103	0	566
Cost	$52,555	$63,727	$33,740	$123,186	$33,089	$0	$306,297

RFCCP Second Leg - Outbound Transportation Cost

Weight(Lb)	9,136,755	
GBLs	5,132	
Cost	$530,531	

Total RFCCP Cost	$836,828
Cost Difference (Direct - RFCCP)	$23,577

( ) - Loss

APPENDIX D

Sensitivity Analysis For Pool Program Cost

Table D-1

POOLING SYSTEM SUMMARY
DIRECT COST VS RFCCP COST

(MODELLING 2ND LEG POOLING COST WITH GT RATES & 1.35 $/CWT)

RFCCs	Weight	Inbound GBLs	Outbound GBLs	Pooling Cost	Direct Cost	Savings (Direct - Pooling)	Percent Savings	Direct $/Cwt	Pooling $/Cwt
New York, NY	6,364,091	676	5,827	$634,060	$486,633	($147,427)	-30.30%	$7.6465	$9.9631
Jacksonville, FL	26,292,191	1,086	10,828	$2,270,173	$2,131,140	($139,033)	-6.52%	$8.1056	$8.6344
Dallas, TX	30,984,519	1,220	5,975	$2,543,807	$2,992,689	$448,882	15.00%	$9.6587	$8.2099
* Los Angeles, CA	21,916,184	1,024	8,920	$2,053,232	$2,300,368	$247,136	10.74%	$10.4962	$9.3686
Chicago, IL	11,096,853	722	10,339	$1,190,674	$1,327,433	$136,759	10.30%	$11.9622	$10.7298
Mechanicsburg, PA	26,074,366	665	15,865	$1,586,964	$1,877,747	$290,783	15.49%	$7.2015	$6.0863
Richmond, VA	40,416,646	886	13,228	$2,041,390	$2,360,509	$319,119	13.52%	$5.8404	$5.0509
Memphis, TN	24,184,812	584	17,190	$1,901,487	$2,110,177	$208,690	9.89%	$8.7252	$7.8623
Tracy, CA	21,842,602	681	11,035	$1,858,789	$1,868,299	$9,510	0.51%	$8.5535	$8.5099
Columbus, OH	6,993,085	567	8,892	$716,056	$788,661	$72,605	9.21%	$11.2777	$10.2395
Ogden, UT	9,136,755	566	5,132	$818,639	$860,405	$41,766	4.85%	$9.4170	$8.9598
Total	225,302,104	8,677	113,231	$17,615,271	$19,104,061	$1,488,790	7.79%	$8.4793	$7.8185

() - Loss

Note: Sites marked with '*' indicate results based on most recent DORO site analysis extrapolated to one year.

Table D-2

POOLING SYSTEM SUMMARY
DIRECT COST VS RFCCP COST

(MODELLING 2ND LEG POOLING COST WITH GT RATES & 1.00 $/CWT)

RFCCs	Weight	Inbound GBLs	Outbound GBLs	Pooling Cost	Direct Cost	Savings (Direct - Pooling)	Percent Savings	Direct $/Cwt	Pooling $/Cwt
New York, NY	6,364,091	676	5,827	$611,989	$486,633	($125,356)	-25.76%	$7.6465	$9.6163
Jacksonville, FL	26,292,191	1,086	10,828	$2,178,422	$2,131,140	($47,282)	-2.22%	$8.1056	$8.2854
Dallas, TX	30,984,519	1,220	5,975	$2,435,407	$2,992,689	$557,282	18.62%	$9.6587	$7.8601
* Los Angeles, CA	21,916,184	1,024	8,920	$2,053,232	$2,300,368	$247,136	10.74%	$10.4962	$9.3686
Chicago, IL	11,096,853	722	10,339	$1,152,199	$1,327,433	$175,234	13.20%	$11.9622	$10.3831
Mechanicsburg, PA	26,074,366	665	15,865	$1,496,240	$1,877,747	$381,507	20.32%	$7.2015	$5.7384
Richmond, VA	40,416,646	886	13,228	$1,900,294	$2,360,509	$460,215	19.50%	$5.8404	$4.7018
Memphis, TN	24,184,812	584	17,190	$1,817,400	$2,110,177	$292,777	13.87%	$8.7252	$7.5146
Tracy, CA	21,842,602	681	11,035	$1,782,686	$1,868,299	$85,613	4.58%	$8.5535	$8.1615
Columbus, OH	6,993,085	567	8,892	$691,918	$788,661	$96,743	12.27%	$11.2777	$9.8943
Ogden, UT	9,136,755	566	5,132	$786,807	$860,405	$73,598	8.55%	$9.4170	$8.6114
Total	225,302,104	8,677	113,231	$16,906,594	$19,104,061	$2,197,467	11.50%	$8.4793	$7.5040

() - Loss

Note: Sites marked with '*' indicate results based on most recent DORO site analysis extrapolated to one year.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No 0704-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	July 1992	Final

4. TITLE AND SUBTITLE
An Estimate of Transportation Savings from the Regional Freight Consolidation Center

5. FUNDING NUMBERS

6. AUTHOR(S)
Mark Kleinhenz

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Defense Logistics Agency
Operations Research and Economic Analysis Office (DLA-LO)
Cameron Station
Alexandria, VA 22304-6100

8. PERFORMING ORGANIZATION REPORT NUMBER
DLA-92-P90259

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Defense Logistics Agency (DLA-OT)
Cameron Station
Alexandria, VA 22304-6100

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Public Release; Unlimited Distribution

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

This work is an analysis of the potential savings of the Regional Freight Consolidation Center Program (RFCCP). The feasibility studies, published in 1987 and 1988, explored the RFCCP concept under ideal conditions, presenting a best case scenario. The purpose of this study is to re-evaluate the possible savings in transportation dollars of the RFCCP based on the first 3 years of experience with limited RFCC operations. Experience with the vendor program is based on operations at the five commercial sites; experience with the pool program is limited to the one operational pool site located in Los Angeles. The objectives are: to calculate the transportation cost of direct shipment; to calculate the cost of those same shipments through the RFCCP and to compare the results of those calculations on a site and on an overall basis. The scope of the study encompasses both vendor and pool operations at the 11 RFCC sites, using data from the period July 1989 through June 1990; the scope of this work does not include the Primary Distribution System.

14. SUBJECT TERMS	15. NUMBER OF PAGES
vendor, pool, distribution	66
	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	